SEQUENCE LISTING

<110> Deutsches Krebsforschungszentrum

<120> Use of ADAM 12 for diagnosis and therapy of preeclampsia

<130> DK62208PC

<150> EP03023815.8

<151> 2003-10-17

<160> 20

<170> PatentIn version 3.1

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cgcgagggct 180

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Val Ser Leu Trp Asn Gln Gly Arg Ala Asp Glu Val Val Ser Ala Ser
                35                  40                  45

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492
Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys
            50                  55                  60

aat cat cca gaa gtg ctg aat att cga cta caa cgg gaa agc aaa gaa
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Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu
        65                  70                  75

ctg atc ata aat ctg gaa aga aat gaa ggt ctc att gcc agc agt ttc
588
Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe
    80                  85                  90

acg gaa acc cac tat ctg caa gac ggt act gat gtc tcc ctc gct cga
636
Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg
95                  100                 105                 110

aat tac acg gta att ctg ggt cac tgt tac tac cat gga cat gta cgg
684
Asn Tyr Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg
                115                 120                 125

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732
Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg
            130                 135                 140

gga ctt att gtg ttt gaa aat gaa agc tat gtc tta gaa cca atg aaa
780
Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys
        145                 150                 155

agt gca acc aac aga tac aaa ctc ttc cca gcg aag aag ctg aaa agc
828
Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser
    160                 165                 170
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876
Val Arg Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala
175                 180                 185                 190

aag aat gtg ttt cca cca ccc tct cag aca tgg gca aga agg cat aaa
924
Lys Asn Val Phe Pro Pro Pro Ser Gln Thr Trp Ala Arg Arg His Lys
                195                 200                 205

aga gag acc ctc aag gca act aag tat gtg gag ctg gtg atc gtg gca
972
Arg Glu Thr Leu Lys Ala Thr Lys Tyr Val Glu Leu Val Ile Val Ala
            210                 215                 220

gac aac cga gag ttt cag agg caa gga aaa gat ctg gaa aaa gtt aag
1020
Asp Asn Arg Glu Phe Gln Arg Gln Gly Lys Asp Leu Glu Lys Val Lys
        225                 230                 235

cag cga tta ata gag att gct aat cac gtt gac aag ttt tac aga cca
1068
Gln Arg Leu Ile Glu Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro
    240                 245                 250

ctg aac att cgg atc gtg ttg gta ggc gtg gaa gtg tgg aat gac atg
1116
Leu Asn Ile Arg Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met
255                 260                 265                 270

gac aaa tgc tct gta agt cag gac cca ttc acc agc ctc cat gaa ttt
1164
Asp Lys Cys Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe
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1212
Leu Asp Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn
            290                 295                 300

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1260
Ala Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met
        305                 310                 315

gcc cca atc atg agc atg tgc acg gca gac cag tct ggg gga att gtc
1308
Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile Val
    320                 325                 330

atg gac cat tca gac aat ccc ctt ggt gca gcc gtg acc ctg gca cat
1356
Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu Ala His
335                 340                 345                 350

gag ctg ggc cac aat ttc ggg atg aat cat gac aca ctg gac agg ggc
1404
Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu Asp Arg Gly
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1452
Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys Ile Met Asn Ala
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tcc acc ggg tac cca ttt ccc atg gtg ttc agc agt tgc agc agg aag
1500
Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser Ser Cys Ser Arg Lys
        385                 390                 395

gac ttg gag acc agc ctg gag aaa gga atg ggg gtg tgc ctg ttt aac
1548
Asp Leu Glu Thr Ser Leu Glu Lys Gly Met Gly Val Cys Leu Phe Asn
    400                 405                 410

ctg ccg gaa gtc agg gag tct ttc ggg ggc cag aag tgt ggg aac aga
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Leu Pro Glu Val Arg Glu Ser Phe Gly Gly Gln Lys Cys Gly Asn Arg
415                 420                 425                 430

ttt gtg gaa gaa gga gag gag tgt gac tgt ggg gag cca gag gaa tgt
1644
Phe Val Glu Glu Gly Glu Glu Cys Asp Cys Gly Glu Pro Glu Glu Cys
                435                 440                 445

atg aat cgc tgc tgc aat gcc acc acc tgt acc ctg aag ccg gac gct
1692
Met Asn Arg Cys Cys Asn Ala Thr Thr Cys Thr Leu Lys Pro Asp Ala
            450                 455                 460

gtg tgc gca cat ggg ctg tgc tgt gaa gac tgc cag ctg aag cct gca
1740
Val Cys Ala His Gly Leu Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala
        465                 470                 475

gga aca gcg tgc agg gac tcc agc aac tcc tgt gac ctc cca gag ttc
1788
Gly Thr Ala Cys Arg Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe
    480                 485                 490

tgc aca ggg gcc agc cct cac tgc cca gcc aac gtg tac ctg cac gat
1836
Cys Thr Gly Ala Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp
495                 500                 505                 510

ggg cac tca tgt cag gat gtg gac ggc tac tgc tac aat ggc atc tgc
1884
Gly His Ser Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys
                515                 520                 525

cag act cac gag cag cag tgt gtc aca ctc tgg gga cca ggt gct aaa
1932
Gln Thr His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys
            530                 535                 540

cct gcc cct ggg atc tgc ttt gag aga gtc aat tct gca ggt gat cct
1980
Pro Ala Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro
        545                 550                 555
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tat ggc aac tgt ggc aaa gtc tcg aag agt tcc ttt gcc aaa tgc gag
2028
Tyr Gly Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys Glu
    560                 565                 570

atg aga gat gct aaa tgt gga aaa atc cag tgt caa gga ggt gcc agc
2076
Met Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly Ala Ser
575                 580                 585                 590

cgg cca gtc att ggt acc aat gcc gtt tcc ata gaa aca aac atc ccc
2124
Arg Pro Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr Asn Ile Pro
                595                 600                 605

ctg cag caa gga ggc cgg att ctg tgc cgg ggg acc cac gtg tac ttg
2172
Leu Gln Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr His Val Tyr Leu
            610                 615                 620

ggc gat gac atg ccg gac cca ggg ctt gtg ctt gca ggc aca aag tgt
2220
Gly Asp Asp Met Pro Asp Pro Gly Leu Val Leu Ala Gly Thr Lys Cys
        625                 630                 635

gca gat gga aaa atc tgc ctg aat cgt caa tgt caa aat att agt gtc
2268
Ala Asp Gly Lys Ile Cys Leu Asn Arg Gln Cys Gln Asn Ile Ser Val
    640                 645                 650

ttt ggg gtt cac gag tgt gca atg cag tgc cac ggc aga ggg gtg tgc
2316
Phe Gly Val His Glu Cys Ala Met Gln Cys His Gly Arg Gly Val Cys
655                 660                 665                 670

aac aac agg aag aac tgc cac tgc gag gcc cac tgg gca cct ccc ttc
2364
Asn Asn Arg Lys Asn Cys His Cys Glu Ala His Trp Ala Pro Pro Phe
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tgt gac aag ttt ggc ttt gga gga agc aca gac agc ggc ccc atc cgg
2412
Cys Asp Lys Phe Gly Phe Gly Gly Ser Thr Asp Ser Gly Pro Ile Arg
            690                 695                 700

caa gca gat aac caa ggt tta acc ata gga att ctg gtg acc atc ctg
2460
Gln Ala Asp Asn Gln Gly Leu Thr Ile Gly Ile Leu Val Thr Ile Leu
        705                 710                 715

tgt ctt ctt gct gcc gga ttt gtg gtt tat ctc aaa agg aag acc ttg
2508
Cys Leu Leu Ala Ala Gly Phe Val Val Tyr Leu Lys Arg Lys Thr Leu
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ata cga ctg ctg ttt aca aat aag aag acc acc att gaa aaa cta agg
2556
Ile Arg Leu Leu Phe Thr Asn Lys Lys Thr Thr Ile Glu Lys Leu Arg
735                 740                 745                 750
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2604
Cys Val Arg Pro Ser Arg Pro Pro Arg Gly Phe Gln Pro Cys Gln Ala
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cac ctc ggc cac ctt gga aaa ggc ctg atg agg aag ccg cca gat tcc
2652
His Leu Gly His Leu Gly Lys Gly Leu Met Arg Lys Pro Pro Asp Ser
            770                 775                 780

tac cca ccg aag gac aat ccc agg aga ttg ctg cag tgt cag aat gtt
2700
Tyr Pro Pro Lys Asp Asn Pro Arg Arg Leu Leu Gln Cys Gln Asn Val
        785                 790                 795

gac atc agc aga ccc ctc aac ggc ctg aat gtc cct cag ccc cag tca
2748
Asp Ile Ser Arg Pro Leu Asn Gly Leu Asn Val Pro Gln Pro Gln Ser
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act cag cga gtg ctt cct ccc ctc cac cgg gcc cca cgt gca cct agc
2796
Thr Gln Arg Val Leu Pro Pro Leu His Arg Ala Pro Arg Ala Pro Ser
815                 820                 825                 830

gtc cct gcc aga ccc ctg cca gcc aag cct gca ctt agg cag gcc cag
2844
Val Pro Ala Arg Pro Leu Pro Ala Lys Pro Ala Leu Arg Gln Ala Gln
                835                 840                 845

ggg acc tgt aag cca aac ccc cct cag aag cct ctg cct gca gat cct
2892
Gly Thr Cys Lys Pro Asn Pro Pro Gln Lys Pro Leu Pro Ala Asp Pro
            850                 855                 860

ctg gcc aga aca act cgg ctc act cat gcc ttg gcc agg acc cca gga
2940
Leu Ala Arg Thr Thr Arg Leu Thr His Ala Leu Ala Arg Thr Pro Gly
        865                 870                 875

caa tgg gag act ggg ctc cgc ctg gca ccc ctc aga cct gct cca caa
2988
Gln Trp Glu Thr Gly Leu Arg Leu Ala Pro Leu Arg Pro Ala Pro Gln
    880                 885                 890

tat cca cac caa gtg ccc aga tcc acc cac acc gcc tat att aag tga
3036
Tyr Pro His Gln Val Pro Arg Ser Thr His Thr Ala Tyr Ile Lys
895                 900                 905

gaagccgaca ccttttttca acagtgaaga cagaagtttg cactatcttt
cagctccagt   3096

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35 40 45

Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys Asn His
50 55 60

Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu Leu Ile
65 70 75 80

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Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe Thr Glu
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Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg Asn Tyr
            100                 105                 110

Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg Gly Tyr
        115                 120                 125

Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg Gly Leu
    130                 135                 140

Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys Ser Ala
145                 150                 155                 160

Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser Val Arg
                165                 170                 175

Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala Lys Asn
            180                 185                 190

Val Phe Pro Pro Pro Ser Gln Thr Trp Ala Arg Arg His Lys Arg Glu
        195                 200                 205

Thr Leu Lys Ala Thr Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn
    210                 215                 220

Arg Glu Phe Gln Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg
225                 230                 235                 240

Leu Ile Glu Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn
                245                 250                 255

Ile Arg Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys
            260                 265                 270

Cys Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp
        275                 280                 285

Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala Gln
    290                 295                 300

Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met Ala Pro
305                 310                 315                 320
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Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile Val Met Asp
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His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu Ala His Glu Leu
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Gly His Asn Phe Gly Met Asn His Asp Thr Leu Asp Arg Gly Cys Ser
        355                 360                 365

Cys Gln Met Ala Val Glu Lys Gly Gly Cys Ile Met Asn Ala Ser Thr
    370                 375                 380

Gly Tyr Pro Phe Pro Met Val Phe Ser Ser Cys Ser Arg Lys Asp Leu
385                 390                 395                 400

Glu Thr Ser Leu Glu Lys Gly Met Gly Val Cys Leu Phe Asn Leu Pro
                405                 410                 415

Glu Val Arg Glu Ser Phe Gly Gly Gln Lys Cys Gly Asn Arg Phe Val
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Glu Glu Gly Glu Glu Cys Asp Cys Gly Glu Pro Glu Glu Cys Met Asn
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Arg Cys Cys Asn Ala Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys
    450                 455                 460

Ala His Gly Leu Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr
465                 470                 475                 480

Ala Cys Arg Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr
                485                 490                 495

Gly Ala Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His
            500                 505                 510

Ser Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys Gln Thr
        515                 520                 525

His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys Pro Ala
    530                 535                 540

Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro Tyr Gly
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Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys Glu Met Arg
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Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly Ala Ser Arg Pro
            580                 585                 590

Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr Asn Ile Pro Leu Gln
        595                 600                 605

Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr His Val Tyr Leu Gly Asp
    610                 615                 620

Asp Met Pro Asp Pro Gly Leu Val Leu Ala Gly Thr Lys Cys Ala Asp
625                 630                 635                 640

Gly Lys Ile Cys Leu Asn Arg Gln Cys Gln Asn Ile Ser Val Phe Gly
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Val His Glu Cys Ala Met Gln Cys His Gly Arg Gly Val Cys Asn Asn
            660                 665                 670

Arg Lys Asn Cys His Cys Glu Ala His Trp Ala Pro Pro Phe Cys Asp
        675                 680                 685

Lys Phe Gly Phe Gly Gly Ser Thr Asp Ser Gly Pro Ile Arg Gln Ala
    690                 695                 700

Asp Asn Gln Gly Leu Thr Ile Gly Ile Leu Val Thr Ile Leu Cys Leu
705                 710                 715                 720

Leu Ala Ala Gly Phe Val Val Tyr Leu Lys Arg Lys Thr Leu Ile Arg
                725                 730                 735

Leu Leu Phe Thr Asn Lys Lys Thr Thr Ile Glu Lys Leu Arg Cys Val
            740                 745                 750

Arg Pro Ser Arg Pro Pro Arg Gly Phe Gln Pro Cys Gln Ala His Leu
        755                 760                 765

Gly His Leu Gly Lys Gly Leu Met Arg Lys Pro Pro Asp Ser Tyr Pro
    770                 775                 780

Pro Lys Asp Asn Pro Arg Arg Leu Leu Gln Cys Gln Asn Val Asp Ile
785                 790                 795                 800

Ser Arg Pro Leu Asn Gly Leu Asn Val Pro Gln Pro Gln Ser Thr Gln
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805 810 815

Arg Val Leu Pro Pro Leu His Arg Ala Pro Arg Ala Pro Ser Val Pro
820 825 830

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835 840 845

Cys Lys Pro Asn Pro Pro Gln Lys Pro Leu Pro Ala Asp Pro Leu Ala
850 855 860

Arg Thr Thr Arg Leu Thr His Ala Leu Ala Arg Thr Pro Gly Gln Trp
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Glu Thr Gly Leu Arg Leu Ala Pro Leu Arg Pro Ala Pro Gln Tyr Pro
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His Gln Val Pro Arg Ser Thr His Thr Ala Tyr Ile Lys
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cgcgagggct 180

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348
       Met Ala Ala Arg Pro Leu Pro Val Ser Pro Ala Arg Ala Leu
       1               5                  10

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396
Leu Leu Ala Leu Ala Gly Ala Leu Leu Ala Pro Cys Glu Ala Arg Gly
15                  20                  25                  30

gtg agc tta tgg aac gaa gga aga gct gat gaa gtt gtc agt gcc tct
444
Val Ser Leu Trp Asn Glu Gly Arg Ala Asp Glu Val Val Ser Ala Ser
                35                  40                  45

gtt cgg agt ggg gac ctc tgg atc cca gtg aag agc ttc gac tcc aag
492
Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys
            50                  55                  60

aat cat cca gaa gtg ctg aat att cga cta caa cgg gaa agc aaa gaa
540
Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu
        65                  70                  75

ctg atc ata aat ctg gaa aga aat gaa ggt ctc att gcc agc agt ttc
588
Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe
    80                  85                  90

acg gaa acc cac tat ctg caa gac ggt act gat gtc tcc ctc gct cga
636
Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg
95                  100                 105                 110

aat tac acg gta att ctg ggt cac tgt tac tac cat gga cat gta cgg
684
Asn Tyr Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg
                115                 120                 125

gga tat tct gat tca gca gtc agt ctc agc acg tgt tct ggt ctc agg
732
Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg
            130                 135                 140

gga ctt att gtg ttt gaa aat gaa agc tat gtc tta gaa cca atg aaa
780
Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys
        145                 150                 155

agt gca acc aac aga tac aaa ctc ttc cca gcg aag aag ctg aaa agc
828
Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser
    160                 165                 170

gtc cgg gga tca tgt gga tca cat cac aac aca cca aac ctc gct gca
876
Val Arg Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala
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175                 180                 185                 190

aag aat gtg ttt cca cca ccc tct cag aca tgg gca aga agg cat aaa
924
Lys Asn Val Phe Pro Pro Pro Ser Gln Thr Trp Ala Arg Arg His Lys
                195                 200                 205

aga gag acc ctc aag gca act aag tat gtg gag ctg gtg atc gtg gca
972
Arg Glu Thr Leu Lys Ala Thr Lys Tyr Val Glu Leu Val Ile Val Ala
            210                 215                 220

gac aac cga gag ttt cag agg caa gga aaa gat ctg gaa aaa gtt aag
1020
Asp Asn Arg Glu Phe Gln Arg Gln Gly Lys Asp Leu Glu Lys Val Lys
        225                 230                 235

cag cga tta ata gag att gct aat cac gtt gac aag ttt tac aga cca
1068
Gln Arg Leu Ile Glu Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro
    240                 245                 250

ctg aac att cgg atc gtg ttg gta ggc gtg gaa gtg tgg aat gac atg
1116
Leu Asn Ile Arg Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met
255                 260                 265                 270

gac aaa tgc tct gta agt cag gac cca ttc acc agc ctc cat gaa ttt
1164
Asp Lys Cys Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe
                275                 280                 285

ctg gac tgg agg aag atg aag ctt cta cct cgc aaa tcc cat gac aat
1212
Leu Asp Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn
            290                 295                 300

gcg cag ctt gtc agt ggg gtt tat ttc caa ggg acc acc atc ggc atg
1260
Ala Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met
        305                 310                 315

gcc cca atc atg agc atg tgc acg gca gac cag tct ggg gga att gtc
1308
Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile Val
    320                 325                 330

atg gac cat tca gac aat ccc ctt ggt gca gcc gtg acc ctg gca cat
1356
Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu Ala His
335                 340                 345                 350

gag ctg ggc cac aat ttc ggg atg aat cat gac aca ctg gac agg ggc
1404
Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu Asp Arg Gly
                355                 360                 365

tgt agc tgt caa atg gcg gtt gag aaa gga ggc tgc atc atg aac gct
1452
Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys Ile Met Asn Ala
            370                 375                 380
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tcc acc ggg tac cca ttt ccc atg gtg ttc agc agt tgc agc agg aag
1500
Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser Ser Cys Ser Arg Lys
        385                 390                 395

gac ttg gag acc agc ctg gag aaa gga atg ggg gtg tgc ctg ttt aac
1548
Asp Leu Glu Thr Ser Leu Glu Lys Gly Met Gly Val Cys Leu Phe Asn
    400                 405                 410

ctg ccg gaa gtc agg gag tct ttc ggg ggc cag aag tgt ggg aac aga
1596
Leu Pro Glu Val Arg Glu Ser Phe Gly Gly Gln Lys Cys Gly Asn Arg
415                 420                 425                 430

ttt gtg gaa gaa gga gag gag tgt gac tgt ggg gag cca gag gaa tgt
1644
Phe Val Glu Glu Gly Glu Glu Cys Asp Cys Gly Glu Pro Glu Glu Cys
                435                 440                 445

atg aat cgc tgc tgc aat gcc acc acc tgt acc ctg aag ccg gac gct
1692
Met Asn Arg Cys Cys Asn Ala Thr Thr Cys Thr Leu Lys Pro Asp Ala
            450                 455                 460

gtg tgc gca cat ggg ctg tgc tgt gaa gac tgc cag ctg aag cct gca
1740
Val Cys Ala His Gly Leu Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala
        465                 470                 475

gga aca gcg tgc agg gac tcc agc aac tcc tgt gac ctc cca gag ttc
1788
Gly Thr Ala Cys Arg Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe
    480                 485                 490

tgc aca ggg gcc agc cct cac tgc cca gcc aac gtg tac ctg cac gat
1836
Cys Thr Gly Ala Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp
495                 500                 505                 510

ggg cac tca tgt cag gat gtg gac ggc tac tgc tac aat ggc atc tgc
1884
Gly His Ser Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys
                515                 520                 525

cag act cac gag cag cag tgt gtc aca ctc tgg gga cca ggt gct aaa
1932
Gln Thr His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys
            530                 535                 540

cct gcc cct ggg atc tgc ttt gag aga gtc aat tct gca ggt gat cct
1980
Pro Ala Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro
        545                 550                 555

tat ggc aac tgt ggc aaa gtc tcg aag agt tcc ttt gcc aaa tgc gag
2028
Tyr Gly Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys Glu
    560                 565                 570
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atg aga gat gct aaa tgt gga aaa atc cag tgt caa gga ggt gcc agc
2076
Met Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly Ala Ser
575                 580                 585                 590

cgg cca gtc att ggt acc aat gcc gtt tcc ata gaa aca aac atc ccc
2124
Arg Pro Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr Asn Ile Pro
                595                 600                 605

ctg cag caa gga ggc cgg att ctg tgc cgg ggg acc cac gtg tac ttg
2172
Leu Gln Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr His Val Tyr Leu
            610                 615                 620

ggc gat gac atg ccg gac cca ggg ctt gtg ctt gca ggc aca aag tgt
2220
Gly Asp Asp Met Pro Asp Pro Gly Leu Val Leu Ala Gly Thr Lys Cys
        625                 630                 635

gca gat gga aaa atc tgc ctg aat cgt caa tgt caa aat att agt gtc
2268
Ala Asp Gly Lys Ile Cys Leu Asn Arg Gln Cys Gln Asn Ile Ser Val
    640                 645                 650

ttt ggg gtt cac gag tgt gca atg cag tgc cac ggc aga ggg gtg tgc
2316
Phe Gly Val His Glu Cys Ala Met Gln Cys His Gly Arg Gly Val Cys
655                 660                 665                 670

aac aac agg aag aac tgc cac tgc gag gcc cac tgg gca cct ccc ttc
2364
Asn Asn Arg Lys Asn Cys His Cys Glu Ala His Trp Ala Pro Pro Phe
                675                 680                 685

tgt gac aag ttt ggc ttt gga gga agc aca gac agc ggc ccc atc cgg
2412
Cys Asp Lys Phe Gly Phe Gly Gly Ser Thr Asp Ser Gly Pro Ile Arg
            690                 695                 700

caa gca gaa gca agg cag gaa gct gca gag tcc aac agg gag cgc ggc
2460
Gln Ala Glu Ala Arg Gln Glu Ala Ala Glu Ser Asn Arg Glu Arg Gly
        705                 710                 715

cag ggc cag gag ccc gtg gga tcg cag gag cat gcg tct act gcc tca
2508
Gln Gly Gln Glu Pro Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser
    720                 725                 730

ctg aca ctc atc tga gccctcccat gacatggaga ccgtgaccag tgctgctgca
2563
Leu Thr Leu Ile
735

gaggaggtca cgcgtcccca aggcctcctg tgactggcag cattgactct
gtggctttgc   2623

catcgtttcc atgacaacag acacaacaca gttctcgggg ctcaggaggg
gaagtccagc   2683
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gttgagcttc 2743

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accactctgg 2803

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tcactgagcc 2863

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agaagaaggt 3103

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gcagtactca 3163

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catttaacaa 3223

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3328

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<211> 738

<212> PRT

<213> Homo sapiens

<400> 4

Met Ala Ala Arg Pro Leu Pro Val Ser Pro Ala Arg Ala Leu Leu Leu
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Ala Leu Ala Gly Ala Leu Leu Ala Pro Cys Glu Ala Arg Gly Val Ser
20 25 30

Leu Trp Asn Glu Gly Arg Ala Asp Glu Val Val Ser Ala Ser Val Arg
35 40 45

Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys Asn His
50 55 60

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Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu Leu Ile
65                  70                  75                  80

Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe Thr Glu
                85                  90                  95

Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg Asn Tyr
            100                 105                 110

Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg Gly Tyr
        115                 120                 125

Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg Gly Leu
    130                 135                 140

Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys Ser Ala
145                 150                 155                 160

Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser Val Arg
                165                 170                 175

Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala Lys Asn
            180                 185                 190

Val Phe Pro Pro Pro Ser Gln Thr Trp Ala Arg Arg His Lys Arg Glu
        195                 200                 205

Thr Leu Lys Ala Thr Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn
    210                 215                 220

Arg Glu Phe Gln Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg
225                 230                 235                 240

Leu Ile Glu Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn
                245                 250                 255

Ile Arg Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys
            260                 265                 270

Cys Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp
        275                 280                 285

Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala Gln
    290                 295                 300
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Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met Ala Pro
305 310 315 320

Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile Val Met Asp
325 330 335

His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu Ala His Glu Leu
340 345 350

Gly His Asn Phe Gly Met Asn His Asp Thr Leu Asp Arg Gly Cys Ser
355 360 365

Cys Gln Met Ala Val Glu Lys Gly Gly Cys Ile Met Asn Ala Ser Thr
370 375 380

Gly Tyr Pro Phe Pro Met Val Phe Ser Ser Cys Ser Arg Lys Asp Leu
385 390 395 400

Glu Thr Ser Leu Glu Lys Gly Met Gly Val Cys Leu Phe Asn Leu Pro
405 410 415

Glu Val Arg Glu Ser Phe Gly Gly Gln Lys Cys Gly Asn Arg Phe Val
420 425 430

Glu Glu Gly Glu Glu Cys Asp Cys Gly Glu Pro Glu Glu Cys Met Asn
435 440 445

Arg Cys Cys Asn Ala Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys
450 455 460

Ala His Gly Leu Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr
465 470 475 480

Ala Cys Arg Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr
485 490 495

Gly Ala Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His
500 505 510

Ser Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys Gln Thr
515 520 525

His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys Pro Ala
530 535 540

Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro Tyr Gly

545 550 555 560

Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys Glu Met Arg
565 570 575

Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly Ala Ser Arg Pro
580 585 590

Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr Asn Ile Pro Leu Gln
595 600 605

Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr His Val Tyr Leu Gly Asp
610 615 620

Asp Met Pro Asp Pro Gly Leu Val Leu Ala Gly Thr Lys Cys Ala Asp
625 630 635 640

Gly Lys Ile Cys Leu Asn Arg Gln Cys Gln Asn Ile Ser Val Phe Gly
645 650 655

Val His Glu Cys Ala Met Gln Cys His Gly Arg Gly Val Cys Asn Asn
660 665 670

Arg Lys Asn Cys His Cys Glu Ala His Trp Ala Pro Pro Phe Cys Asp
675 680 685

Lys Phe Gly Phe Gly Gly Ser Thr Asp Ser Gly Pro Ile Arg Gln Ala
690 695 700

Glu Ala Arg Gln Glu Ala Ala Glu Ser Asn Arg Glu Arg Gly Gln Gly
705 710 715 720

Gln Glu Pro Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser Leu Thr
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Leu Ile

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<211> 2642

<212> DNA

<213> Homo sapiens

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agaagaccac 120

cattgaaaaa ctaaggtgtg tgcgcccttc ccggccaccc cgtggcttcc
aaccctgtca 180

ggctcacctc ggccaccttg gaaaaggcct gatgaggaag ccgccagatt
cctacccacc 240

gaaggacaat cccaggagat tgctgcagtg tcagaatgtt gacatcagca
gacccctcaa 300

cggcctgaat gtccctcagc cccagtcaac tcagcgagtg cttcctcccc
tccaccgggc 360

cccacgtgca cctagcgtcc ctgccagacc cctgccagcc aagcctgcac
ttaggcaggc 420

ccaggggacc tgtaagccaa acccccctca gaagcctctg cctgcagatc
ctctggccag 480

aacaactcgg ctcactcatg ccttggccag gaccccagga caatgggaga
ctgggctccg 540

cctggcaccc ctcagacctg ctccacaata tccacaccaa gtgcccagat
ccacccacac 600

cgcctatatt aagtgagaag ccgacacctt ttttcaacag tgaagacaga
agtttgcact 660

atctttcagc tccagttgga gtttttttgta ccaactttta ggatttttt
taatgtttaa 720

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gctatggtgc 780

tctgtctact tgcacaggta cttgtaaatt attaatttat gcagaatgtt
gattacagtg 840

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ctgaccagcc 1320

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2642

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<211> 205

<212> PRT

<213> Homo sapiens

<400> 6

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Leu Ala Ala Gly Phe Val Val Tyr Leu Lys Arg Lys Thr Leu Ile Arg
20 25 30

Leu Leu Phe Thr Asn Lys Lys Thr Thr Ile Glu Lys Leu Arg Cys Val
35 40 45

Arg Pro Ser Arg Pro Pro Arg Gly Phe Gln Pro Cys Gln Ala His Leu
50 55 60

Gly His Leu Gly Lys Gly Leu Met Arg Lys Pro Pro Asp Ser Tyr Pro
65 70 75 80

Pro Lys Asp Asn Pro Arg Arg Leu Leu Gln Cys Gln Asn Val Asp Ile
85 90 95

Ser Arg Pro Leu Asn Gly Leu Asn Val Pro Gln Pro Gln Ser Thr Gln
100 105 110

Arg Val Leu Pro Pro Leu His Arg Ala Pro Arg Ala Pro Ser Val Pro
115 120 125

Ala Arg Pro Leu Pro Ala Lys Pro Ala Leu Arg Gln Ala Gln Gly Thr

130 135 140

Cys Lys Pro Asn Pro Pro Gln Lys Pro Leu Pro Ala Asp Pro Leu Ala
145 150 155 160

Arg Thr Thr Arg Leu Thr His Ala Leu Ala Arg Thr Pro Gly Gln Trp
165 170 175

Glu Thr Gly Leu Arg Leu Ala Pro Leu Arg Pro Ala Pro Gln Tyr Pro
180 185 190

His Gln Val Pro Arg Ser Thr His Thr Ala Tyr Ile Lys
195 200 205

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<211> 908

<212> DNA

<213> Homo sapiens

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catgacatgg 120

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ctgtgactgg 180

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tgctcctgag 360

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ttgggcccag 480

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ctctggctgc 540

aacttaatgc tctgatatgg cttttagcat ttattatatg aaaatagcag
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tgaatggcat 660

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acatgcgtga ccagcagtac tcaggtttga gggtttgcag aaagccaggg
aacccacaga 780

gtcaccaacc cttcatttaa caagtaagaa tgttaaaaag tgaaaacaat
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aaaaaaaa
908

<210> 8

<211> 34

<212> PRT

<213> Homo sapiens

<400> 8

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Gln Glu Pro Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser Leu Thr
20 25 30

Leu Ile

<210> 9

<211> 23

<212> DNA

<213> Homo sapiens

<400> 9
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23

<210> 10

<211> 23

<212> DNA

<213> Homo sapiens

<400> 10
gaattcctat ggttaaacct tgg
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<210> 11

<211> 24

<212> DNA

<213> Homo sapiens

<400> 11
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<210> 12

<211> 24

<212> DNA

<213> Homo sapiens

<400> 12
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24

<210> 13

<211> 23

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (15)..(15)

<223> Mismatch (g instead of c)

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23

<210> 14

<211> 23

<212> DNA

<213> Homo sapiens

<400> 14
ggactctgca gcttcctgcc ttg
23

<210> 15

<211> 21

<212> DNA

<213> Homo sapiens

<400> 15
tcggggctca ggaggggaag t
21

<210> 16

<211> 21

<212> DNA

<213> Homo sapiens

<400> 16
ggctgccaag gcggaggtgt c
21

<210> 17

<211> 24

<212> DNA

<213> Homo sapiens

<400> 17
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24

<210> 18

<211> 24

<212> DNA

<213> Homo sapiens

<400> 18
cccggctgtc tgtcttggtg ctct
24

<210> 19

<211> 21

<212> DNA

<213> Homo sapiens

<400> 19
ctgctgagat gggaaagggc t
21

<210> 20

<211> 21

<212> DNA

<213> Homo sapiens

<400> 20
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21